

CLAIMS

What is claimed is:

1. A security system to increase the security of a manual key operated unit, comprising:
 - an electronic key reader to read an identification code of an electronic key and to produce a signal according to the read identification code; and
 - a microprocessor to operate at least one necessary operating component of the manual key operated unit based on whether the signal received by the electronic key reader contains a predetermined identification code.
2. The security system of claim 1, wherein the microprocessor operates the at least one necessary operating component for a predetermined amount of time if the received signal contains the predetermined identification code, otherwise the microprocessor operates the at least one necessary operating component for as long as a manual key operates the manual key operated unit if the manual key is used to operate the manual key operated unit within the predetermined amount of time.
3. The security system of claim 1, further comprising a light indicating unit to indicate whether the read identification code is the predetermined identification code.
4. The security system of claim 3, wherein the light indicating unit comprises:
 - a first light emitting diode indicating when the detected identification code is correct; and
 - a second light emitting diode indicating when the detected identification code is not correct.
5. The security system of claim 1, wherein the manual operated key unit is a motor vehicle.
6. The security system of claim 1, wherein the manual operated key unit is a storage unit.
7. The security system of claim 1, wherein the manual operated key unit is a gun

cabinet.

8. A security system to secure an external unit having plural separate units secured by a respective locking device, comprising:

a key detecting unit to detect electronic keys; and

a control unit to control enabling or disabling of the locking devices of the separate units depending on the electronic key detected by the key detecting unit.

9. The security system of claim 8, wherein the security system further comprises locking components, each locking component to connect with a respective locking device of the external unit to enable or disable the locking device, the locking components being controlled by the control unit.

10. The security system of claim 8, wherein the key detecting unit detects a programmed identification code within the electronic key.

11. The security system of claim 9, wherein the control unit is a microprocessor that controls the locking components to enable or disable the respective locking devices depending on a signal received from the key detecting unit indicating whether a specific electronic key has been detected.

12. The security system of claim 11, wherein the microprocessor is programmable to change a code corresponding to the electronic key.

13. The security system of claim 11, wherein the locking components enable the respective locking device for a predetermined amount of time, or if a manufacturer provided key is used to operate the locking device within the predetermined amount of time, then for as long as the manufacturer provided key continues to be used to operate that locking device.

14. The security system of claim 11, wherein the external unit is a management unit to manage business activities, and the separate units are different business management areas.

15. The security system of claim 11, wherein the external unit is a building, and the separate units are areas within the building.

16. The security system of claim 11, wherein the external unit is a motor vehicle engine, and the separate units are components required to activate the motor vehicle engine.

17. The security system of claim 11, wherein the external unit is a gun cabinet, and the separate units are different compartment areas of the gun cabinet.

18. A security system to increase the security of a manual key operated motor vehicle, comprising:

an electronic key reader to read an identification code within an electronic key and to generate a signal indicating the read identification code; and

a microprocessor to enable at least one component of the motor vehicle to be operated by the manual key based on the signal received from the electronic key reader.

19. The security system of claim 18, wherein the microprocessor enables the at least one component to be operated for a predetermined time period or for as long as the manual key is used to operate the at least one component of the motor vehicle if the manual key is used to operate the motor vehicle within the predetermined time period.

20. The security unit of claim 19, wherein the at least one component includes a fuel pump to supply fuel to a motor of the motor vehicle.

21. The security unit of claim 19, wherein the at least one component includes a starter unit to start a motor of the motor vehicle.

22. The security unit of claim 19, wherein the at least one component includes at least one accessory compartment of the motor vehicle.

23. The security unit of claim 21, further comprising an indicator to indicate whether a specific identification code has been read.

24. The security unit of claim 23, wherein the indicator includes:
a green light emitting diode (LED) to indicate when the specific identification code has been read; and

a red light emitting diode (LED) to indicate when the specific identification code has not been read,

wherein the green and red LEDs flash on and off when the motor vehicle engine is not being operated, and turn off when the motor vehicle engine is being operated.

25. The security unit of claim 18, wherein the microprocessor is programmable to change the identification code.

26. A security system to secure multiple areas of a management system, comprising:
a key reader unit to read programmed identification codes within an electronic key and generate a signal indicating the read identification code;

plural electronic locking components each to control the security of a respective area of the management system; and

a processor to control each of the electronic locking components depending on the signal received from the key reader unit.

27. The security system of claim 26, wherein the key reader unit comprises plural electronic key readers each to read a specific programmed identification code and to generate a signal indicating the respective identification code read.

28. The security system of claim 27, wherein the processor controls each of the electronic locking components depending on the signals received from each of the plural electronic key readers.

29. The security system of claim 28, wherein each management system area is controlled by a specific programmed identification code within an electronic key.

30. The security system of claim 26, wherein each management system area is controlled by a specific programmed identification code within an electronic key.

31. The security unit of claim 30, wherein the processor is programmable to change the identification code corresponding to the respective area.

32. The security unit of claim 30, wherein the processor is programmable to change

an assignment between the electronic key and one of the multiple areas.

33. A method of controlling access to an external unit having at least one separate area secured by a locking device, the method comprising:

setting the number of times an electronic key has been used to operate the locking device of the at least one separate area to zero after it has been determined that an electronic key has not been used to operate the at least one locking device for a predetermined amount of time;

determining whether an electronic key has been used a predetermined number of times to operate the at least one locking device, and if so, disabling the at least one locking device, otherwise determining if a specific electronic key has been used to operate the at least one locking device;

enabling the at least one locking device to be operated for a predetermined amount of time if the specific electronic key has been used to operate the at least one locking device, otherwise adding counting up by one the number of times an incorrect electronic key has been used to operate the at least one locking device, and then repeating the operation of determining whether an electronic key has been used a predetermined number of times to operate the at least one locking device.

34. A method of controlling the use of a motor vehicle, comprising:

disabling a motor vehicle engine component and/or compartments of the motor vehicle;

determining whether an electronic key having a programmed identification code has been used to operate a motor vehicle engine component and/or compartments of the motor vehicle;

enabling the motor vehicle engine component and/or compartments to be operated by a manufacturer provided key for a predetermined amount of time if the electronic key having a programmed identification code has been used to operate a motor vehicle engine component and/or compartments of the motor vehicle, otherwise continuing to disable the motor vehicle engine component and/or compartments of the motor vehicle from being operated with a manufacturer provided key; and

extending the operation of the motor vehicle engine component and/or compartments by the manufacturer provided key for as long as the manufacturer provided key continues to be used to operate a motor vehicle engine component and/or compartments of the motor vehicle if it is determined that the manufacturer provided key has been used within the predetermined

amount of time.

35. A method of controlling access to a management system having plural storage areas, comprising:

determining whether a first type of electronic key having authority to access each of the plurality of storage areas has been detected, and if so, then enabling each of the plurality of storage areas of the management system to be accessed for a predetermined amount of time;

determining whether a second type of key having authority to access specific ones of the plurality of storage areas has been detected, and if so, then enabling each of the specific storage areas of the management system to be accessed for a predetermined amount of time; and

determining whether a third type of key having authority to access select ones of the specific storage areas has been detected, and if so, then enabling each of the select ones of the specific storage areas to be accessed for a predetermined amount of time.

36. The method of claim 35, wherein the predetermined amount of time the amount of time required to conduct daily business activities required by the respective storage area.

37. The method of claim 36, wherein the management system is a bar within a restaurant, and storage areas include the area in which the bar is located, a cash register, a cabinet to lock alcohol therein, and/or a cabinet to store valuable items therein.

38. A method of controlling a lockable area, comprising:

determining whether a first electronic key having a predetermined identification code therein has been detected to operate the lockable area, and if not, then continuing to determine whether the first electronic key has been detected, and if so, then determining whether a second electronic key having another predetermined identification code therein has been detected to operate the lockable area, and if not, then continuing to determine whether the second electronic key has been detected; and

enabling the lockable area to be accessed if the first electronic key and the second electronic key have been detected within a predetermined amount of time.

39. A security system to secure an external unit secured by a locking device which is operated by a local key, comprising:

a key detecting unit to detect an electronic key; and
a control unit to control the locking device of the local unit to be operated by the local key according to the detecting of the electronic key.

40. The security system of claim 39, further comprising:
a locking component disposed between the control unit and the locking device to enable and disable the locking device according to the detecting of the electronic key.

41. The security system of claim 39, wherein the locking device is enabled to be operated by the local key when the key detecting unit detects the electronic key, and the locking device is disabled not to be operated by the local key when the key detecting unit does not detect the electronic key.

42. The security system of claim 39, wherein the key detecting unit and the control unit form an integrated body to be attached to the external unit, and the locking device is disabled not to be operated by the local key when at least one of the key detecting unit and the control unit is removed from the external unit.

43. The security system of claim 39, wherein the key detecting unit generates an identification signal, and the control unit compares the identification signal with a reference signal to generate a control signal to enable and disable the operation of the locking device.

44. The security system of claim 43, wherein the control unit counts the number of times when the key detecting unit generates the identification signal which is different from the reference signal, and disable the locking device when the number of times is greater than a predetermined number.

45. The security system of claim 44, wherein the control unit starts to receive the identification signal when the control unit is reset by an external controller.

46. The security system of claim 39, wherein the control unit enables the locking device to be operated by the local key for a predetermined period of time when the identification signal is the same as the reference signal.

47. The security system of claim 46, wherein the control unit continues to enable the locking device to be operated by the local key when the locking device is operated by the local key within the predetermined period of time.

48. The security system of claim 47, wherein the control unit disables the locking device when the locking device is not operated by the local key.

49. The security system of claim 39, wherein the external device is a vehicle having an engine activated by the local key through the locking device, and the control unit enables the engine to be activated by the local key depending on the electronic key.

50. The security system of claim 39, wherein the external device is a container accessible using the local key, and the control unit locking device, and the enables the container to be accessed using the local key depending on the electronic key.

51. The security system of claim 39, wherein the external device is a gun cabinet, and the control unit disables the gun cabinet not to be operated by the local key.

52. The security system of claim 39, wherein the external device comprises a first compartment and a second compartment, the locking device comprises a first locking member and a second locking member installed in the first and second compartments, respectively, and the first and second locking members are operable by the control unit according to the detecting of the electronic key while one of the first and second locking members is operable using the local key.

53. The security system of claim 52, wherein the control unit enables the one of the first and second compartments to be accessed using the local key while the other one of the first and second compartments is operable when the key detecting unit detects the electronic key.

54. The security system of claim 39, wherein the local key is one of another electronic key and a manual key, and the locking device is one of an electronic locking device and a manually locking device corresponding to the local key.

55. The security system of claim 39, wherein the control unit comprises a microprocessor to store a reference identification code corresponding to the electronic key, and the microprocessor is programmable to change the identification code.

56. The security system of claim 55, wherein the control unit is disabled when the key detecting unit receives a identification code different from the stroed reference code more than a predetermined times.

57. The security system of claim 56, wherein the control unit is reset to be enabled when the microprocessor is reprogrammed.

58. A security system to secure an external unit secured by first and second locking devices one of which is operable by a local key, comprising:
a key detecting unit to detect an electronic key; and
a control unit to control the first and second locking devices to be operable depending on the detecting of the electronic key, and to control the first locking device not to be operable by the local key.

59. The security system of claim 58, wherein the control unit controls the second locking device to be operable by the local key without the detecting of the electronic key.

60. The security system of claim 58, wherein the control unit controls the first and second locking devices to be operable without the local key.

61. The security system of claim 58, wherein the external unit comprises a second key detecting unit disposed separate from the key detecting unit to detect the local key.

62. The security system of claim 58, wherein the key detecting unit detects the local key, and the control unit controls one of the first and second locking devices to be operable when the key detecting unit detects the local key.

63. The security system of claim 20, wherein the control unit comprises a microprocessor to store identification codes corresponding to the electronic key and the local key.

64. A security system to secure an external unit secured by a locking device operable by a local key, comprising:
a key detecting unit to detect an electronic key; and
a control unit to control the locking device to be operable depending on the detecting of the electronic key so that the external unit is operable depending on the electronic key and the local key.

65. The security system of claim 64, wherein the control unit controls the locking device not to be operable only by the local key.

66. The security system of claim 64, wherein the external unit is a motor vehicle having an engine to be activated by the local key when the key detecting unit detects an electronic key.

67. The security system of claim 64, wherein the external unit is a motor vehicle having an engine, and the local key is an ignition key.

68. The security system of claim 64, wherein the control unit comprises a microprocessor to control functions of the engine according to the electronic key and the ignition key.

69. The security system of claim 64, wherein the external unit comprises an accessory compartment to be accessible by the local key and the electronics key.

70. The security system of claim 64, wherein the key detecting unit is mounted on an outside of the external unit while the control unit is mounted on an inside of the external unit, and the control unit disables the locking device when one of the key detecting unit and the control unit is detached from the external unit.

71. The security system of claim 64, wherein the control unit receives signals from the key detecting unit and the locking device to determine whether the electronic key and the local key are accessed to the key detecting unit and the locking device, respectively, to enable the locking device.

72. A method of securing an external unit secured by a locking device which is operated by a local key in a security system, the method comprising:

detecting an electronic key; and

controlling the locking device of the local unit to be operated by the by the local key according to the detecting of the electronic key.

73. A method of securing an external unit secured by first and second locking devices one of which is operable by a local key in a security system, the method comprising:

detecting an electronic key; and

controlling the first and second locking devices to be operable depending on the detecting of the electronic key, and controlling the first locking device not to be operable by the local key.

74. A method of securing an external unit secured by a locking device operable by a local key in a security system, the method comprising:

detecting an electronic key; and

controlling the locking device to be operable depending on the detecting of the electronic key so that the external unit is operable depending on the electronic key and the local key.